

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
31 March 2005 (31.03.2005)

PCT

(10) International Publication Number
WO 2005/028828 A1

(51) International Patent Classification⁷: **F02B 25/22**
(21) International Application Number:
PCT/SE2003/001491

(22) International Filing Date:
25 September 2003 (25.09.2003)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **AK-TIEBOLAGET ELECTROLUX [SE/SE];** S-105 45 Stockholm (SE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MARTINSSON, Pär [SE/SE];** Ravingatan 10 B, S-556 28 Jönköping (SE). **BERGMAN, Mikael [SE/SE];** Tormenosgatan 24C, S-561 41 Huskvarna (SE). **GUSTAFSSON, Reine [SE/SE];** Frideborgsvägen 8, S-567 30 Vaggeryd (SE).

(74) Agent: **ANDERSSON, Lars;** AB Electrolux, Huskvarna AB, S-433 81 Jönsered (SE).

(81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

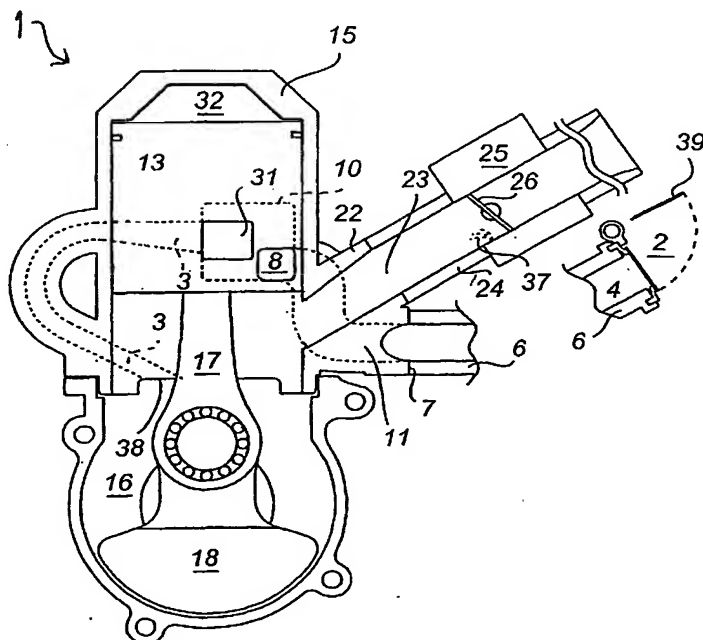
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: TWO-STROKE ENGINE COMPRISING TRANSFER DUCTS FOR INDUCTING AIR IN THE CYLINDER, THE DUCTS HAVING A VOLUME BEING LESS THAN 20% OF A VOLUME SWEEPED BY THE PISTON



(57) Abstract: A crankcase scavenged two-stroke engine (1) comprises a cylinder (15) including scavenging ports (31, 31') and at least one exhaust port, a piston (13), a connecting rod (17), a crankshaft (18) and a generally sealed crankcase (16). The crankcase inducts a fuel/air mixture and is connected to the scavenging ports (31, 31') by means of transfer ducts (3, 3') which, as the piston (13) is travelling from a lower position towards a higher position, are inducting pure air let in from connecting ports (8, 8') near the scavenging ports (31, 31') in the cylinder (15). The transfer duct (3, 3') volume is less than 20 % of a volume swept by the piston (13) during an entire revolution of the crankshaft (18). Recesses (10, 10') are formed in an outer periphery of the piston (13), said recesses (10, 10') co-operating with the connecting ports (8, 8') in the cylinder wall for controlling the filling of the transfer ducts (3, 3') with air. An inlet tube (22) in the cylinder wall supplies the air/fuel mixture, said inlet tube (22) being connected to the crankcase (16) and covered by the piston (13) as the piston (13) is in the lower position, and open to the crankcase (16) as the piston (13) is in the higher position.